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Outer Space—A New Dimension of the Arms Race

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giants was an aircraft hangar built into the underside of each ship. These hangars could house up to five Curtiss Sparrow-Hawk aircraft (F9C-2) which could be launched and recovered in flight. In fact this procedure became so routine that the Sparrow Hawks were often flown with no landing gear other than the hook mechanism which allowed them to grasp the airship's "trapeze-style" recovery device. (By far the best book on the subject of these "flying aircraft carriers" is *The Akron and Macon: Flying Aircraft Carriers of the U.S. Navy* by Dr. Richard K. Smith. This fascinating book is available from the Naval Institute Press.)

Robinson and Keller provide a concise history of the *Akron* and *Macon*, including the loss of the *Akron* off New Jersey in 1933 and the abandonment at sea of the *Macon* off Point Sur, California, in 1935.

The loss of the *Akron* and *Macon* spelled the end of the Navy's experimentation with the rigid airship. Designs were drawn for a ZRCV of 10-million cubic feet capacity capable of carrying 27 dive bombers, but funds were never provided to develop the concept. At the time, 40 PBY flying boats could be purchased for the price of one rigid airship, and the Navy chose to concentrate on these, and on carrier-based, aircraft.

Some writers have speculated that a scouting fleet of rigid airships stationed on the West Coast and in Hawaii could have detected an approaching Japanese task force and prevented the Pearl Harbor attack. Such speculation provides interesting food for thought, but the indisputable fact remains that rigid airships failed to find a place in the Navy arsenal, and were unable to compete with the rapidly developing technology of heavier-than-aircraft. They do stand, however, as symbols of the Navy's willingness to experiment with new concepts, and to search for better ways to do its job.

I recommend *Up Ship* as an excellent treatment of a little known chapter in naval aviation history.

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Stockholm International Peace Research Institute. *Outer Space—A New Dimension of the Arms Race.* Cambridge, Mass.: Oelgeschlager, Gunn & Hain, 1982. 423pp. $35

In 1978, SIPRI, the Stockholm International Peace Research Institute, published *Outer Space: Battlefield of the Future?* which I reviewed in this journal—saying that it was a useful book to those concerned with the technological fundamentals of military science, but that it left one looking for a better, more balanced text, without such a strident antimilitary line. In November 1981, SIPRI organized a symposium Outer Space: A New Dimension of the Arms Race. The outgrowth of this is a collection of the papers read at the symposium together with an abridged and updated version of the 1978 text as an introduction. Included are appendixes which include tables of all probable military satellites launched

betweeen 1977 and 1981, and the six treaties concerning arms control in space.

Like most collections of papers from international conferences, this one suffers from the usual faults of highly variable quality of content, presentation and translation. Some of the translated papers regrettably are almost incomprehensible and others are dull. Those by K.D. McDonald on Satellite Navigation Systems—especially his enthusiastic description of the new NavStar GPS—and by G.E. Perry on the clever amateur detective work on Soviet military satellites by the British Kettering Group are excellent, as is the Sakata and Shimoda paper on Satellite Sensor Technology. Additionally some of the latter papers that propose new arms control measures for space, in a reasonable manner, are worth careful consideration. Nonetheless most of the collection is either difficult or worthless to read.

In abridging and updating his 1978 text, the editor, Bhupendra Jasani, has severely cut his previously useful dissertation on orbital dynamics, but added an interesting chapter on the characteristics of launch vehicles. Taken altogether this part of the book is less useful than the 1978 version. Those readers who are interested in military space technology and those who are active in the arms control field will probably find it worthwhile to read this book; in general, it left me once again looking for a better and more balanced text.

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Haestrup, Jørgen. *European Resistance Movements, 1939-1945: A Complete History*. Westport, Conn.: Meckler Books, 1981. 564pp. $45

Resistance movements during World War II may be the least known of all the varied wartime activities, and part of the reason is that there are surprisingly few books in English on this subject. While many memoirs and biographies exist, along with books on resistance activity in particular countries, a comprehensive study of the European Resistance movements is hard to find. The reason, as Jørgen Haestrup has stated, is because of the paucity of records and documents that have survived. In the name of security, records and messages were seldom retained; the fewer the records the greater the security.

This volume by Jørgen Haestrup is the most comprehensive and informative work on the subject that has been produced. It is thoroughly researched and provides the most detailed study of resistance activities that has been done to date. Haestrup has included in his research journal articles, books, and documents in the Danish, Dutch, English, French, German, Norwegian, and Russian languages—and possibly one or more languages which this reviewer may have overlooked in the footnotes and bibliography. Included in *European Resistance Movements* are the following subjects: the formation of Resistance movements, civil disobedience (demonstrations, strikes,